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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------------|------------------|
| 10/040,276 | 11/09/2001 | Daniel S. Gritter | POU901034US1 | 9648 |
| 7590 | 09/02/2004 | | EXAMINER YIGDALL, MICHAEL J | |
| Blanche E. Schiller, Esq. HESLIN ROTHENBERG FARLEY & MESITI P.C. 5 Columbia Circle Albany, NY 12203 | | | ART UNIT 2122 | PAPER NUMBER |

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------------|---|--|
| Office Action Summary | Application No. 10/040,276 | Applicant(s) GRITTER, DANIEL S. | |
| | Examiner Michael J. Yigdall | Art Unit 2122 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-41 are pending and have been examined. The priority date considered for the application is November 9, 2001.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-11, 13-24, 26-39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,815,714 to Shridhar et al. (hereinafter “Shridhar”).

With respect to claim 1, Shridhar discloses a method of restoring debugging breakpoints (see the abstract), said method comprising:

(a) having a breakpoint that is set to a selected step of a program (see column 4, lines 10-17, which shows breakpoints associated with selected steps of the source code program); and

(b) automatically restoring, after modification of the program, the breakpoint to the selected step (see column 4, lines 23-30, which shows automatically generating or restoring the breakpoints for the selected steps after modifying the program), wherein the selected step is at a different location within the modified program (see column 9, lines 21-35, which shows the selected step at a different location in the modified program).

With respect to claim 2, Shridhar further discloses the limitation wherein said automatically restoring comprises locating the selected step within the modified program (see column 9, lines 38-41, which shows locating the selected step in the modified program), said locating comprising comparing at least one attribute of one or more attributes of the selected step to at least one attribute of one or more attributes of one or more lines of code of the modified program to locate the selected step (see column 6, lines 16-26, which shows comparing attributes of the selected step to lines of code in the program to locate the selected step, and column 6, lines 44-47 and 58-63, which shows the attributes that indicate breakpoint locations).

With respect to claim 3, Shridhar further discloses the limitation wherein the automatically restoring comprises:

- (a) locating the selected step within the modified program (see column 9, lines 38-41, which shows locating the selected step in the modified program); and
- (b) setting the breakpoint at that location (see column 9, lines 47-52, which shows setting the breakpoint at that location).

With respect to claim 4, Shridhar further discloses the limitation wherein the locating comprises using an instruction profile to locate the selected step (see column 5, line 59 to column 6, line 4, which shows using a command file, i.e. an instruction profile, based on commands embedded in the source code, to locate the selected step).

With respect to claim 5, Shridhar further discloses the limitation wherein the instruction profile comprises one or more attributes of one or more machine instructions generated for the selected step (see column 6, lines 5-11, which shows generating assembled object code or

machine instructions for the selected step, and FIG. 6, which shows command file 600, i.e. an instruction profile, comprising attributes of the instructions).

With respect to claim 6, Shridhar further discloses the limitation wherein said locating comprises comparing at least one attribute of the one or more attributes of the instruction profile to at least one attribute of one or more attributes of one or more machine instructions of one or more lines of code of the modified program to locate the selected step (see column 6, lines 16-26, which shows comparing attributes to be included in the command file, i.e. the instruction profile, to attributes of instructions of lines of code in the program to locate the selected step, and column 6, lines 44-47 and 58-63, which shows the attributes that indicate breakpoint locations).

With respect to claim 7, Shridhar further discloses choosing a number of machine instructions of the selected step to be included in the instruction profile (see column 7, lines 26-47, which shows choosing a number of commands or instructions associated with the selected step to be included in the command file, i.e. the instruction profile).

With respect to claim 8, Shridhar further discloses the limitation wherein the choosing comprises:

(a) selecting a number of instructions to be included in a calibration profile (see column 7, lines 26-47, which shows selecting a number of commands or instructions to be included in a first command file, i.e. a calibration profile);

(b) generating the calibration profile for a chosen line of the program, said calibration profile having the selected number of instructions for said chosen line (see FIG. 6 and column 7,

line 64 to column 8, line 1, which shows generating the command file, i.e. the calibration profile, having the appropriate number of instructions);

(c) comparing one or more attributes of said calibration profile to one or more attributes of at least one line of code of the program to obtain a result (see column 6, lines 16-26, which shows comparing attributes to be included in the command file, i.e. the calibration profile, to attributes of lines of code in the program to obtain a result);

(d) determining whether the result is an unambiguous result (see column 6, lines 16-26, which shows determining whether the result is an embedded debug command, i.e. an unambiguous result); and

(e) repeating, zero or more times, said selecting, said generating, said comparing, and said determining until the determining indicates an unambiguous result, wherein the selected number of instructions increases at each iteration (see column 7, lines 57-59, which shows repeating the process for all lines of code in the program, and column 8, lines 1-30, which shows that the number of instructions increases at each iteration), and wherein the selected number of instructions indicates, when there is an indication of an unambiguous result, the number of machine instructions to be included in the instruction profile (see column 6, lines 44-47 and 58-63, which shows that the instructions associated with the embedded debug commands indicate the instructions to be included in the command file, i.e. the instruction profile).

With respect to claim 9, Shridhar further discloses the limitation wherein the different location comprises a different line number within the modified program (see FIG. 7, which shows the selected step at a different line number in the modified program 760 than in the source program 750).

With respect to claim 10, Shridhar further discloses the limitation wherein said having the breakpoint set comprises requesting, by a user, that the breakpoint be set at the selected step (see column 4, lines 36-37, which shows adding commands to the program by the user, and column 5, lines 15-18, which shows that the commands request breakpoints to be set at selected steps).

With respect to claim 11, Shridhar further discloses the limitation wherein said automatically restoring is performed by a debugger (see FIG. 1B, which shows a system for debugging that includes debugger 164).

With respect to claim 13, Shridhar discloses a method of facilitating debugging of programs (see the abstract), said method comprising:

(a) using a debugger to step through a program until it reaches a breakpoint at a selected step (see column 4, lines 10-23, which shows executing a program in a debugger until halting at breakpoints associated with selected steps); and

(b) re-running the debugger, subsequent to revising the program, to step through the revised program until it reaches the breakpoint at the selected step (see column 3, line 66 to column 4, line 7, which shows running the debugger repeatedly after modifying or revising the program), said breakpoint automatically restored, subsequent to the revising, to the selected step, regardless of the location of the selected step within the revised program (see column 4, lines 23-30, which shows automatically generating or restoring the breakpoints for the selected steps after modifying or revising the program).

With respect to claims 14-24, the limitations recited in the claims are analogous to those of claims 1-11, respectively (see the rationale applied to claims 1-11 above, respectively).

With respect to claim 26, the limitations recited in the claim are analogous to those of claim 13 (see the rationale applied to claim 13 above).

With respect to claim 27, the limitations recited in the claim are analogous to those of claim 1 (see the rationale applied to claim 1 above).

With respect to claim 28, the limitations recited in the claim are analogous to those of claim 13 (see the rationale applied to claim 13 above).

With respect to claims 29-39, the limitations recited in the claims are analogous to those of claim 1-11, respectively (see the rationale applied to claims 1-11 above, respectively).

With respect to claim 41, the limitations recited in the claim are analogous to those of claim 13 (see the rationale applied to claim 13 above).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12, 25 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shridhar, as applied to claims 11, 24 and 39 above, respectively, in view of U.S. Pat. No. 5,819,093 to Davidson et al. (hereinafter "Davidson").

With respect to claim 12, although Shridhar discloses a debugger in a multiple processor environment (see column 5, lines 8-10), Shridhar does not expressly disclose the limitation wherein the debugger is a distributed debugger.

However, Davidson discloses a distributed debugger that enables the debugging of distributed applications seamlessly and with low overhead (see column 3, lines 20-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to extend the breakpoint restoring system of Shridhar with the distributed debugging features taught by Davidson, for the purpose of debugging distributed applications seamlessly and with low overhead.

With respect to claims 25 and 40, the limitations recited in the claims are analogous to those of claim 12 (see the rationale applied to claim 12 above).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. U.S. Pat. No. 5,371,747 to Brooks et al. discloses a debugger that maps source constructs to machine instructions. U.S. Pat. No. 5,446,900 to Kimelman discloses a method for statement-level debugging with breakpoints. U.S. Pat. No. 5,835,699 to Kimura discloses a breakpoint system including a lookup table with source-level function signatures. U.S. Pat. No. 6,256,777 to Ackerman discloses a method for debugging optimized code that correlates source

Art Unit: 2122

code to machine code. U.S. Pat. No. 6,263,489 to Olsen et al. discloses a method for debugging optimized code that comprises determining the location in machine code corresponding to a breakpoint set in the source code. U.S. Pat. No. 6,286,132 to Tanaka et al. discloses a debugging support apparatus having breakpoints set in source code.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

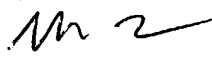
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MY

Michael J. Yigdall
Examiner
Art Unit 2122

mjy


WEI Y. ZHEN
PRIMARY EXAMINER